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To: Nursing Homes NH – 08

From: Michael Steinhauer, Chief, Resident Care Review Section

Via: Susan Schroeder, Director, Bureau of Quality Assurance

Insulin Medication Errors in Nursing Homes

Over the past few years there has been an increase in the options for delivery of insulin therapy available for treating diabetes. Unfortunately, medication errors involving insulin still are identified as one of the top ten medication errors in many facilities. In many medication safety programs, insulin is identified as a high-risk medication due to the errors that occur with this class of medication.

The Bureau of Quality Assurance (BQA) has identified medication errors involving insulin through the nursing home survey process. Many of the errors involve the newer types of insulin and are related to the timing of insulin administration. This memo provides information on recommended procedures for administering insulin. Providers should always consult with their consultant pharmacist, physician and the manufacturer guidelines prior to administering insulin to assure it is being administered properly.

Insulin is classified into five categories: Rapid-Acting, Short-Acting, Intermediate-Acting, Long-Acting and Combination. Many medication errors identified during medication pass observations involve Rapid-Acting, Short-Acting and Combination insulin. These insulins start working within a short time frame and are meant to control blood sugar at meals. Therefore, it is important that the meal and administration of insulin are appropriately timed to optimize blood sugar control.

Resources that providers may wish to refer to are:

1) Your Consultant Pharmacist or Certified Diabetes Educator
2) www.care.diabetesjournals.org/content/vol26/suppl_1/
3) www.novolog.com
4) www.humalog.com

The most frequent insulin administration errors involve rapid-acting and short-acting insulin. In most cases, these insulins are being administered too far in advance of a meal. Typically short-acting regular insulin is recommended to be administered 15-30 minutes prior to eating a meal. Novolog and Humalog, rapid-acting insulins, are recommended to be administered 0-15 minutes before a meal or immediately after eating a meal.

Individual residents may respond differently to these insulins, due to their metabolism or absorption of insulin, which may depend on the location of the injection. If residents do need a greater or shorter time interval between insulin administration and the meal than what is commonly recommended, physician orders should specify those requirements.

If alternative administration timing is not ordered, BQA surveyors will apply the following guidelines:

1) 15-30 minutes before a meal, for short-acting regular insulin.
2) 0-15 minutes before a meal, or immediately after the meal for Humalog and Novolog.
3) Combination products should be administered according to the rapid or short-acting insulin timelines, depending on which product is in the combination.

If the timing between insulin administration and the meal is outside of these parameters, the administration of that dose of insulin will be considered a medication error for purposes of the survey.

If there are further questions please contact Doug Englebert, BQA Pharmacist at 608-266-5388.